

SOME ASPECTS OF THE TUBERCULOSIS PROBLEM *

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"PROBABLY most of us here to-day have had tuberculosis and recovered from it." When Sir Clifford Allbut made this remark to a British audience ten years ago, it caused a distinct shock. To-day it is a statement whose general application we accept with the composure born of the somewhat long-standing knowledge of the fact, but to be singled out individually and told in the voice of conviction, founded on the invaluable, if gruesome, pathological evidence of the autopsy room that the chances are very fair that you to-day are harboring in your lungs little imprisoned colonies of the enemy, seasoned veterans who sleep with one eye open, and who, if injected into the long-suffering guinea-pig, will kill him at the rate of 70 per cent.—this even we might find a disconcerting, if not a surprising, statement.

Every one is some time or other a little tuberculous, declare the German experts. Appalling at first, but as a matter of fact immensely encouraging. According to recognized authorities, we have the consoling discovery that not more than one individual in seven of fair average health exposed to a definite infection succumbs.

According to post-mortem findings one person out of every seven dying from other causes has a walled off tubercular cavity of which he was probably never conscious, and those dying from tuberculosis have been found to have thrown off from five to fifteen previous milder infections. I quote thus fully from Dr. Woods Hutchinson in order to show what a very personal problem this may be to us and that we are not in a position to absolutely plead "not guilty."

When, about thirty years ago, the world began to awaken from its stupor of centuries and to realize that this one great disease, alone, was killing one-seventh of all people born under civilization, no wonder we were appalled at the outlook. We were sadly familiar with death by that process known as going into a decline, a favorite method of re-

* Some phrases and ideas have been quoted from articles by Dr. Woods Hutchinson, because of the weight of his words and opinion, because they will bear repeating, and because some one has said that next to the originator of a good sentence is the quoter.

moving the heroine in the romantic novel. What could be done in such a case but bow in submission to the inscrutable ways of Providence? It seems incredible now, but such was the light in which smallpox was regarded by the physicians of the mediæval schools, but this resigned knowledge of the inevitable was quite different from reading in cold hard figures and unescapable percentages just how many of the race were killed by it. Departments of health were just fairly started on an accurate system of statistics. So much for good bookkeeping. One-seventh of all the deaths literally came to be a war-cry.

Eliminating, for the moment, the burden of saving, as best we may, from one-half to one-third of those in whom the disease has the upper hand, it places before us the far more cheerful task of building and increasing this natural resistance until not merely 70 per cent. of all who are attacked will throw it off, but perhaps 90 per cent. This brings us to the keynote of the problem. We must plan to stop consumption by preventing the consumptive. And the important and valuable features of this campaign are the nature of the methods employed. The impetus was given, and through the efforts of patient scientific research, and spurred on by the threatening cold black-and-white columns of statistics, we have reached at last a definite grasp on the problem and our present attitude to fight it out on lines of prevention, if it takes all summer.

First comes our natural and powerful ally, immunity, the resistance of the human body, technically that outpost of our antituberculosis army, the white blood-cell. If there are billions of them, there are billions of us, and as Dr. Hutchinson quaintly remarks, "These cells of ours are no Sunday-school class. They are old and tough and cunning,—war veterans, whose daily business for some thousands of years has been the eating and digesting of the microbe."

Next, common-sense backed by science presented us with three glittering weapons—sunshine, food, fresh air. There was a new word of power—the open-air treatment. Eighty to 90 per cent. of incipient cases were curable, but cure was a poor weapon compared with prevention. Then came the cheering discovery that after all cure was prevention. The enemies of the disease were our best friends. Sunlight killed the germs as certainly as it gave new life to the patient. Science demonstrated that while the dust taken from the walls and floors of tenements, theatres, churches, and street cars was found to be alive with tubercular germs, on the contrary the walls and floors of tents and cottages where consumptives were being sheltered were almost entirely free from these germs, and right here I wish to remind you that there

is scarcely a single case on record of the transmission of tuberculosis to a physician, nurse, or attendant in a properly equipped institution for its cure. This is a significant fact, which we may well note when we recall the dearth of enthusiasm among the members of our profession for this most deserving class of cases. From science, also, came the comforting discovery that though these germs were horribly omnipresent, and apparently infecting both the heavens and the earth, they had neither wings nor legs, and were subject to the law of gravity. Take care of the sputum, and keep down the dust. House reform! House reform!

The future battle-ground against tuberculosis is in the home, the efforts largely upon the protection of the children. Death lurks on the dirty floor of the dark, damp tenement where elders spit and children crawl, or in the sacred precincts of the equally dark and unventilated parlor. "The most striking feature about tuberculosis," says Flick, "is that it depends entirely on the house. If we had no houses, we would have no tuberculosis."

This brings us to the educational problem. Humanity must be taught the gospel of fresh air and sunlight. If the whole civilized community could take a moderate form of the open-air treatment, its health and efficiency would be so vastly improved, and so much expenditure on relief funds might be saved, that it would be well worth all it cost if tuberculosis had never been heard of. The whole world must be enlisted. Educational propaganda in the form of the warning and the object lesson are of a very certain value. Consider just one stirring if much abused phrase, "The great white plague of the North." Who can estimate how great a factor this one brilliant epithet was in fixing the public mind on consumption as a definite problem?

Education must reach those who will be taught; compulsory legislation those who through ignorance will not. Already, efforts in this direction bear fruit, although in instances we see results that are pathetic or absurd. Many are the trials of the district nurse in her struggles against blind ignorance or perversity. I cannot forbear quoting an article from the *Educational Review* which came to my notice, although it is somewhat of a digression, entitled "Why Education is a Failure." It reads: "The *Educational Review* has received a composition written by a fourteen year old American boy in a Springfield, Mass., school after visiting the recent tubercular exhibit in New York. It tells its own story. 'Tuberculosis was started in 1884 by Dr. Trudeau who had it in the Adirondacks. Although consumption is not inherited, and does not belong to this climate, it is getting very popular.

It is often cured. For instance, a young boy was operated on for appendicitis, but when opened, his appendicee were found to be full of tubercle. He was quickly sewed up, and his father bought him a sweater, an out-of-door outfit, and now he is doing well. In Colorado, where people have consumption, they had to take their furniture out and build a tent, and live in it out of doors. In one of the pictures of Colorado, it shows where a man sat twelve hours with his hands folded. The people of Colorado was very healthy, but Colorado is a very consumptive state; also, Massachusetts. Twelve good breaths a day will cure consumption. Consumption is a germ disease, and three quarters of all consumptives are cured. I saw the germ. It is a big white ball with blue spots on it."

This is hardly a fair illustration of the inefficiency of education, but there is a serious side to the difficulties of this movement, well known to its workers. What is to reach the army of ignorant, vicious, depraved, and often non-English-speaking people, whom poverty, overcrowding, and our pernicious system of foreign immigration have placed among us? Can they be taught a sufficient knowledge of the subject to be anything but an ever-present menace in our midst? Assuredly, there must be laws to step in where other measures fail. The beginning of these laws we see. The results of reform are manifest, and as Osler puts it, "We run barely half the risk of dying of tuberculosis that our parents did, and one-fourth of that of our grandparents."

But the question arises, how many generations will it take at the present rate to reduce the risk entirely? Civilization is curing its own ills, but by such slow degrees that, as Dr. Young of Arizona writes, "Nations may rise and fall; armies may come and go, but for generations to come, the international army engaged in its struggle against tuberculosis will have innumerable battles to fight."

Let us remember that tuberculosis is a very ancient enemy to mankind. In the fifth century B.C., Hypocrates announced that phthisis taken early can be cured. Aristotle, a century later, notes that the Greeks believed it to be contagious. Had they coupled this belief with 20th century reform, this day and generation would not be engaged in its present struggle. In the first century B.C., Celsus recommends change of climate, especially life at sea! Did we not suppose the change of climate idea originated with this generation? France in the early days, by proper isolation of cases, well nigh rid herself of tuberculosis, but, reposing in a state of over-confidence, she began to be remiss in caring for her tubercular, and to-day is as sorely desolated as the rest of the world.

Some thousand years since the Greeks taught that tuberculosis was contagious, we have an annual death-rate from it of 150,000 in our modern and enlightened United States alone. "Tuberculosis causes a monetary loss of \$1,000,000,000 a year to the United States," says Dr. Langley Porter of San Francisco; "if the people of the States would stop to consider that one individual who was infected was the means of spreading the disease to, on an average, ten other persons, they would rise up and demand a revolution in legislative laws that would force people to take ordinary precautions for the isolation and prevention of the disease."

The medical profession knows how to cure and how to prevent tuberculosis, but the question of the total eradication of the disease lies in the hands of statesmen. There may be no valid reason for the panic-stricken dread of the intelligent and cleanly consumptive or the tendency to make him an outcast, but the ignorant and apathetic victim of this disease, careless and filthy in his habits, while an object demanding our sincere pity becomes also one of dread and menace, against whom the cry of unclean may well be raised in view of the survival of the fittest. No wonder the eminent James Whittaker, after a series of warning illustrations, said in his lectures, "Gentlemen, I implore you, damn the sputum." By all means, damn the sputum, but to do so effectively is a greater task than to dam the Mississippi, or for that matter, all the great rivers of all the world. It is easy to tell the ignorant consumptive what he should do, but it would require the services of a guardian angel apiece to follow him about and see that he does it. Those who will not take proper precautions, either through ignorance, perversity, or their own weakness and wretchedness, and the apathy of approaching the solution, should be removed by rigid process of law to proper and comfortable surroundings where their habits may be supervised, *for spit they will*. This would not only be kindness to the consumptive, himself, but to his family and the community. No undue and misdirected mercy is shown the smallpox patient, or the hapless leper; why then this sentiment regarding the isolation of the dangerous and probably hopeless victim of an infectious malady, which claims approximately a million lives a year?

Says Dr. Woods Hutchinson in a recent article: "As a council of perfection, the ideal procedure would be to promptly remove each consumptive, as soon as discovered, from his house and place him in a public sanitarium provided by the state, for the sake of removing him from the conditions which cause the disease, of placing him under conditions more hopeful, and for prevention of further infection. The

only valid objections to such a plan are those of expense, but when we have become properly aroused, and awake to the huge and almost incredible burden which this disease with its 160,000 deaths a year is now imposing on the United States, then our community will ultimately assume this expense, but so long as our motto remains, 'Millions for cure, but nothing for prevention,' we will dodge this issue." Should expense be a consideration in view of the facts and figures which we cannot dodge? Says the great master, Pasteur: "It is in the power of mankind to make all infectious disease disappear from the world." Think of the glamor of this possibility. Millions of lives sacrificed and yet this disease can be made to disappear from the world. And then the shame of it is that we have to consider the expense, with millions sacrificed annually to our present political system of what we have come to call "graft," and solutions of this expense problem on all sides, if we but have the power to make them.

In several parts of the United States they are now beginning to establish colonies for poor people suffering from tuberculosis. The co-operative colony and farm system may be a practical solution of expense. It is no altruistic dream to suggest that the Federal Government might clear itself, or perhaps even derive revenue to further the work, from a well-established system of compulsory colonization, farming and state sanatoria, whereby the very ill were cared for, poor convalescents partly worked their way, and the rich paid, for by the rule of isolation the rich would be compelled to patronize the state sanatoria, always bearing in mind that there would be proper segregation of cases. The efficiency of the one mill tax has already been demonstrated, a special tuberculosis tax might be entirely justifiable. When equal suffrage becomes general, the country is full of millionaires and bachelors, for instance, just tempting Providence as legitimate victims of such a tax.

Unfortunately, preventive protection is largely summed up in a few Don'ts, and after that, you take your chance of one in four to one in seven, according to various authorities. Take twelve good breaths a day, as the school boy says, and trust Providence, or immunity, according to your point of view. All about you, this omnipresent disease, with very few restrictions placed by authorities.

I have been beating retreats from brooms and clouds of dust rising from antique carpets since I entered the hotel where I temporarily reside and I have no assurance that the previous occupant of my room was not tubercular and that those same clouds of dust are not alive with designing microbes—and as a proof of the probability of this will state

that one of the highest tuberculosis death-rates is to be found among the hotel chambermaids of our large cities.

And yet this disease is banishable from the earth if the people so will. Just some millions of dollars to be repaid four fold to the state when its eradication will have stopped the present drain caused by the loss of one-seventh of the ablest members of society and the expense its presence now imposes. In other words, just some paltry millions, or billions, for isolation.

I know much of this sounds visionary, idealistic, and may be, in instances, hard on the individual, but every eventually successful project was once an ideal; and to be directly harsh is often to be indirectly kind. "Sentiments which to most of us seem fundamental and innate are only matters of habit. Studying various peoples and ages we find that ideas on most social subjects are entirely movable. Marriage, eugenics, economics, civics, education, hygiene, and medicine are all branches of sociology and must join hands,"¹ and to become powers it would seem must become not only social but legislative issues.

It is sure to come some day, but are we to work under disadvantages for another generation, or are we going to—may I say?—get busy, and try to obtain a wise, just process of law? We have been saying for so long that this is a free country that I think that remark belongs on the "bromide" list, but under this present free and glorious system, if I had time, I could quote statistics that would make us think that we were on at least four straight roads to rack and ruin, and I think you will all agree, after some of the discussions of these meetings, that we do need some governmental housekeeping.

Now, in conclusion, I have three deductions to present to you in the form of questions for discussion: first, are we working on just the right track, considering that forty years after the discovery of the tuberculosis bacillus, and the hopeful predictions made at that time that another generation would see the stamping out of the disease—we are, to quote Dr. Warfield of St. Louis, "still agitating, we might say, just in the middle of the agitation, to organize and fight tuberculosis;" second, are not insufficient funds and neglect of the rule of isolation the chief handicaps? third, is it not of foremost importance that a strenuous effort be made to educate the people that rigid laws to control the spread of tuberculosis are for their own good, if not always their own convenience, to spur them on to pass those laws, and ought it not to be the duty of every enlightened individual to work toward the end

¹Quoted from *McClure's* for June.

whereby, instead of having to depend on the voluntary subscriptions of a few, that the governing forces of our states will have been induced to pass laws for the protection of the people against this disease, appropriation of state moneys and, if necessary, compelling each individual to pay his small share in the general expense? If not, why not?

ELLEN N. LAMOTTE, R.N. (Baltimore).—In discussing Miss Courier's able paper on "Some Aspects of the Tuberculosis Problem" our attention centres on two statements—education for those who will learn and compulsory segregation for those who will not.

At the point where education fails to protect the community, stronger measures must be put in force. Just at present the guileless public is in possession of a mighty idea—an obsession—to the effect that "the careful consumptive is not a menace." This sentiment is repeated far and wide, the length and breadth of the land—wherever the tuberculosis campaign has been carried, this war-cry has gone with it. At the Tuberculosis Congress in Washington last fall the whole building was filled with riotous signs to this effect, on every wall, in every corridor, on banners and posters, tuberculosis societies here, antituberculosis societies there, all alike shouting it out, "The Careful Consumptive is not a Menace." Small wonder then that the guileless public has come to believe that a system that proclaims that the careful consumptive is not a menace, is at the same time producing consumptives of the most scrupulously careful sort. In our opinion this effect was pernicious to a degree. The initiated understood, but the public did not. The public saw, what?—an immense array of associations and institutions all proclaiming the same fact; and was thus duped by a false sense of security, both as to the amount of work being done, and the quality of the results obtained. It created a false impression and we who know the truth should speak it.

If "education" produced careful consumptives it would be well, but while the consumptive is allowed at large in the community, subject to no restrictions of any kind, education is barren of results. The only place where a consumptive can be *adequately careful*—and I take it we want adequate, not partial or relative carefulness—is in a hospital for the segregation of advanced cases. There and there only is he not a menace.

For nearly six years the Visiting Nurse Association of Baltimore has been doing tuberculosis work, during which time we have cared for almost four thousand consumptives. Of the 1160 patients that came under the personal observation of the writer, classification has been made according to the amount of care that they were able to exercise in order to safeguard their families and the community. Here is the showing, as reported to the Tuberculosis Congress last year: Adequately careful, 9; fairly careful, 143; careless, 719; grossly careless, 299; total, 1160. Months of patient teaching had been spent on these patients, by the doctors, other nurses than the writer, charity agents, and so forth. The failure was not due to lack of teaching. It lay with the class of people to be taught, who, by reason of poverty, ignorance, and environment, had been crushed into a position in which they could not apply this teaching to their daily lives.

But carelessness of the rights of others is not confined entirely to people

of this class. I have no figures to prove this contention, but we are all familiar with educated and intelligent people,—people who should know better,—who have tuberculosis, yet who are no whit more careful or considerate of the health of the community than the dwellers in the poorest homes.

In many states there are laws requiring that all cases of tuberculosis be reported to the Board of Health. The law should further provide that all consumptives, rich or poor, regardless of class distinction, should be under supervision in their own homes. The paramount consideration should be the health of the community. At the point at which a patient is so careless as to endanger the other members of his household, or other people, the state should interfere. This carelessness may either be due to helplessness or selfishness, but in any case it should not be tolerated. A tuberculous patient should only be allowed at large in the community when he can prove to a trained and impartial inspector that he is not a menace to it.

THE PRESIDENT.—I might say in reply to Miss Courrier's question as to whether we were on the right track after working forty years, the prediction was made at that time that the disease would be stamped out. As part of the public community interested in the health of the public, are we as nurses satisfied that we are working along the right line? Is there nothing more that we could do?

MISS SYMONS.—About two miles out of the city the state has bought a farm and they are now building a tuberculosis sanitarium. It is said to be the best sanitarium in Ohio. They have their own lighting and heating power, and now they have finished the hospital proper and are building homes for the attendants and nurses, and it is to be a regular open-air sanitarium for tuberculosis cases.

MISS DIEDRICKSON.—Our sanitarium in Wisconsin has been running two years. I am sorry to say that two-thirds of our patients are young people who work in offices and closed rooms and, as Miss Courrier has said, chambermaids from hotels, which shows that the worst cases come from hotels. The sanitarium is 1100 feet above sea-level, and we have accommodations for about eighty patients, and if we get our appropriation we hope to have an infirmary. Some patients are so bad they are carried to the hospital and we have to use our registration room for an infirmary. My observation for the last two years shows that nurses do not advocate patients leaving their homes and going to a sanitarium. We also have a sanitarium at Gray Gables, Wisconsin. I hope nurses will advocate sending patients to a sanitarium because most of them are in homes where no cleanliness is observed at all.

THE PRESIDENT.—What are we going to do if there are not enough sanitariums to accommodate the people?

MISS DIEDRICKSON.—I think if all the nurses will help we will have kitchens added. I have a postal card showing the selection of a site for our kitchen. We have about twenty-five men on our waiting list, while we have half as many women. They are told by the nurses, "If you stay there three or four weeks you will know how to take care of yourself," and when they go home they think they know how to take care of themselves. We had eight cases last spring and they have all returned and three of them are in an advanced stage. One was given permission to go home and he was so excited that he came down with a hemorrhage. They do not realize that they have to live the same

at home as they do at the sanitarium. At Milwaukee the patients are impressed with the fact that they must live up to the rules all the time, the same at home as at the sanitarium.

MISS JOHNSON.—We must know how we can best do this work in the home with safety to ourselves and safety to those who are not infected and the best care to those who are infected. That is what I want to know how to do.

MISS JAMESON.—I think most nurses know that work done along dispensary lines has been found the cheapest and as meeting the demand of the patient where sanitarium are not possible. Many of our states have sanitarium for mild cases and they have hospitals in many cases for the moderately advanced cases. but for many of those cases there seems to be no hope. Though every effort is being made the work is slow, the work of prevention, and although the open-air treatment is favorable, there are not many such places where they can be taken care of and we have to fall back on the dispensaries. It takes money to provide for out-door treatment to supply what is necessary. As private nurses we go into the home and people are very much interested in the work of prevention, and if our nurses would act as missionaries I believe they can secure for their tuberculosis work all the funds that are necessary.

MRS. HICKEY.—We have in existence in the state of Washington a society made up of private citizens called the "Anti-Tuberculosis League." In this county league there was one of our King County nurses of the tuberculous sick. We as skilled nurses felt that this work should begin at the beginning, not with those dying or with those already infected, but with the little children in the schools. So we took the matter up with our superintendent and told him that the time had come when the children should be taught in school to take care of their health, and that it was more essential to teach the children the gospel of health than it was the three R's. Being a progressive man he said he felt the same way and asked us to draw up a plan. We suggested a physical director and that the mothers be appointed as a committee to decide what was to be done in this line. We wrote all over and received primers from New York City which are used in the schools there. They suggested to our department of health that they print those same primers, and if they could not afford to print them altogether they could print lessons in bulletin form each month, and from the first to the sixth grade the teacher could use the lesson on the prevention of tuberculosis and the prevention and cure of tuberculosis, and from the seventh and eighth grades through the high school work the work should be taken up with the prevention league. They use this method in Washington, D. C., and they sent us all their literature that we might see what was done. We have also recommended that Galnick's "Hygiene" shall be taught in the schools. This takes up the care of the skin, the air, how to breathe right, and in our opinion we have found it to be the best book we could find to put before the children on this subject. Our superintendent expects to put this in the school beginning with the session in September.

THE PRESIDENT.—May I ask Mrs. Hickey whether the teachers understand sufficiently the laws of hygiene to teach them.

MRS. HICKEY.—I think they understand the simple laws of hygiene; the lessons are so simple that almost any teacher can understand them. I do not think it is necessary to go into a deep study, but teach children that they must sleep with the windows open, teach them how to eat properly, and to drink

pure water instead of five cups of coffee. Teach them especially the value of fresh air. We are trying to teach the teachers that they must keep their windows open. Most schools have a system of ventilation and the manufacturers or directors tell them they must not open the windows or they will interfere with the "system." We tell the teachers they must open the windows to get the fresh air in and the bad air out.

MISS DOCK.—Don't you think it might be better to have this teaching in the hands of a trained nurse? It was brought out at the tuberculosis conference that the highest rate of death was among school teachers and we find the ventilation is at fault.

MISS NUTTING.—Is not ventilation in school of actual significance? Those who have gone further behind the conditions that control, whether it is for ventilating a room or whether the work is done to keep the room in order, know there is no comparison between the two. We have an interesting plan for nurses to follow. In two cities friendly nurses are at work bringing it before the nurses and teaching the children through the nurses. Pittsburg has a nurse teacher and a similar request has come from another city to take little children from the fifth grade on. The teacher is supplied by the tuberculosis association or by the nurses. As soon as we have nurses trained to teach the children properly by means of the methods we teach the child we will have a demand for that teacher. Beyond hygiene there is something deeper in which the children of this day and generation need to be instructed. There are two things that we want: We want better housing conditions and we want better wages for our children. When children receive this instruction they are going to demand better homes and higher wages.

MISS THOMPSON.—I want to say that we have given this subject of tuberculosis a great deal of thought, and I think most associations in cities have tried to do what they could, but I think visiting nurses come closer to it than any one else; but, as Miss Nutting said, it is well to advise people what to do, but if they have not a thing to do it with it is hard to advise. That is what we visiting nurses have to contend with. It is a fine claim, but it is not practical unless you make patients abuse your charity, which you do not wish to do. I think the tuberculosis nurse is like the contagious nurse. It is something that should be regulated by legislation. Each county should be responsible for its own tuberculous cases. We should have a compulsory law, people should be compelled to go to these various places to be cared for. I feel very strongly on this subject, because in Milwaukee we tried to do the same as other cities do for their tuberculous poor, but I must confess that we have not accomplished a great deal. It is an easy matter to deal with people who will follow the instructions, but we must not forget that the majority of the tuberculous poor are people whom it is hard to deal with, and it is not altogether their own fault. They have no money to buy food, they cannot buy the food they need, and a good many are self-respecting enough to say they do not want charity, but I think the county institution would better solve the problem. I think each county should be made responsible for its tuberculous poor, and although there may be some sentiment about it, yet if they were compelled to go there I dare say in twenty or thirty years we would talk less and spend less money on tuberculosis, for under the present conditions we are not accomplishing one-half we ought to accomplish.

MISS DIEDRICKSON.—They do not find all the cases there are, because in our own institution we get the advanced cases while the milder cases are taken care of elsewhere. If each county does not take care of those advanced cases who is going to take care of them? Are they going to be left in their homes or sent to some place where they will be properly taken care of?

MISS DOCK.—At the settlement in New York we have more calls for nurses to take care of tuberculosis work than we can supply. This work is far in excess of other kinds of work. I thought it would be well to impress upon the minds of nurses the necessity of fitting themselves for this work of taking care of tuberculosis cases. The country wants women whose children will act with the anti-tuberculosis movement all over the country, and it is possible to develop and educate the people along those lines. They come to us for nurses who have specialized in this work; many such calls come to us. They want a nurse who not only knows how to be a good nurse, but a nurse who is able to get a mental grasp of the situation.

MISS DELANO.—It seems to me the thing we need is a campaign of education to improve the environments of the people. In New York we pay for light by the square inch and do not always get it then. We are the only ones who pay for light in that way. People in country districts shut up their houses and shut out the light. It seems to me that as nurses we are in a position to start a campaign of education for light. In some places it is easy and in some places it is difficult. The improvement of the conditions of the working people would solve the problem more quickly than anything else.

MISS McCORMAC.—In Connecticut we have just got an appropriation for a county hospital, and there is agitation for a law to apply to people who are incurable. The investigation of those cases at present will be made by visiting or dispensary nurses.

MISS GILES.—In Pittsburg we have not only the nurses Miss Nutting referred to employed by schools, but the city has four other nurses employed, going around and visiting not only tuberculosis cases, but investigating the poor and teaching people how to live. The tuberculosis league in Pittsburg has five or six nurses employed at the present time and could use at least twice as many more if they had the money to spare. The nurses are almost worn out by having so much to do, and they have a demand for a great deal of work they cannot do. Their work does not consist so much in nursing as in going from house to house and teaching people how to live and how to take care of themselves and their homes and how to take care of contagious diseases. At the commencement exercises of our training school the mayor made an address and one of his remarks was that since they had introduced nurses in this work in the city of Pittsburg the percentage of contagious cases, typhoid, diphtheria, and tuberculosis, had been reduced more than one-fourth.

THE PRESIDENT.—We have to close this discussion, although it is very interesting. Let us realize that if we cannot have district and school nurses established everywhere, there is much that we can do as individuals and associations. In New York the District Nursing Association of Northern Westchester County has started an educational campaign. They have issued circulars and cards that are sent to schools in towns and country districts within their jurisdiction. These are simply health cards and are sent to each school in the country; one is given to each pupil, and if the teacher can be

interested they are given topics and the children write essays, and some are very much better than that which the Boston boy wrote. This is something an association of nurses could do. The expense of printing these cards is small and each child can take one home which can be hung up the same as a wall calendar.

POST-OPERATIVE CARE WITHOUT DRUGS

By CHARLOTTE E. DANCY

Battle Creek Sanitarium

It is my wish this morning to direct your attention to some physiologic methods of caring for patients who have to undergo surgical operations. By physiologic methods I mean those which aim to obey and fulfil the natural laws of the body as we know them, which aim to bring about natural conditions under unnatural circumstances. To do this I shall have to refer to what is done at the Battle Creek Sanitarium, an institution whose object in existence is that it may bring under one roof all the physiologic methods culled from various parts of the world, and may educate the people in these methods, and at the same time may discountenance anything, whether in habit of life, dress, food, medicine, or treatment of disease, which it thinks unphysiologic. I will say that drugs are not discountenanced when scientific investigation shows them to be the best things to use under existing circumstances. For instance, quinine is given in malaria, the serum for diphtheria, etc.

To wisely care for an operative case, one tries to bring about healthful conditions, but what is health? We have come to consider that a good definition of health is, pure blood freely circulating in all parts of the body. Realizing the vast power of the blood as the body's natural defender against invasion and restorer after injury, when one deliberately plans to cut the body, to perhaps remove some part of it, to chance an infection, and to lower the vital resistance by anaesthesia, it is reasonable to turn one's attention to the condition and circulation of the patient's blood before, during, and after an operation.

The subject for an operation is not likely to have either a high opsonic index or a perfect circulation of the blood in every organ of the body. What can be done to raise the opsonic index and to bring about a free circulation of pure blood? When Dr. Wright first made known his discovery of the opsonins, tests were made of the various drugs in common use to decide their effect upon the fighting power of the blood. Only one drug, and that protonuclein, increased the opsonins. The attention was then turned to the bath, and it was found that by reaction to a cold bath, the patient's fighting power was increased, also that alternate hot and cold applications raised the opsonic